



**ENGLISH**

# Datasheet

## RS PRO RS PRO, 12 V dc, DC Axial Fan

Stock No: 5415003

80x80x15mm  
(3.15"x 3.15"x 0.59")

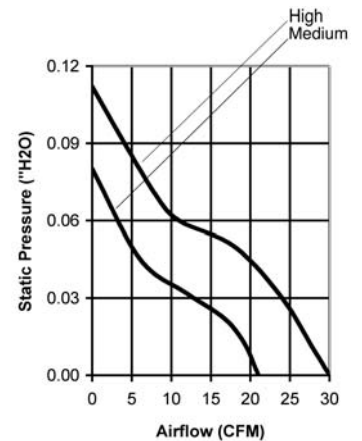


**FRAME & IMPELLER**  
PBT, UL94V-0 Thermoplastic

**POWER CONNECTION**  
Two lead wires 300mm (12")

**AVAILABLE OPTIONS**  
Tachometer  
Locked rotor Alarm

FINGER GUARD: G80-18  
PLASTIC GUARD: G80P  
WIRE MESH GUARD: WMG80M  
FILTER KIT: GRM80-30,  
GRM80-45



MODEL NUMBER	SPEED (RPM)	AIRFLOW (CFM)	NOISE (DB)	VOLTS DC	VOLTAGE RANGE	AMPS	MAX. STATIC PRESSURE (H <sub>2</sub> O)
OD8015-12MB	2440	21	26	12	6~13.8	.15	.08

\* Indicate "B" to specify Ball bearing or "S" to specify Sleeve bearing

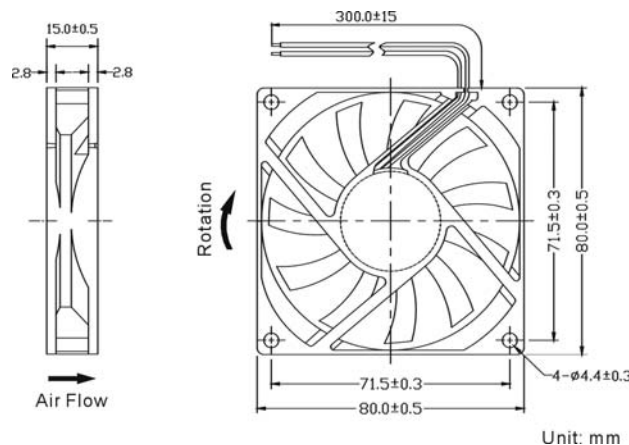
**MOTOR**

Brushless DC, polarity protected, locked rotor protected (current limited), auto restart

**INSULATION RESISTANCE**  
Min. 10M at 500VDC

**DIELECTRIC STRENGTH**  
1 minute at 500VAC / 1 second, max leakage 500 microamp

**LIFE EXPECTANCY (L10)**  
Ball Bearing 60,000 hrs  
Sleeve Bearing 30,000 hrs



**OPERATING TEMPERATURE**  
Ball Bearing -10C ~ +70C  
Sleeve Bearing -10C ~ +60C

Drawing for dimensional reference only.



# DC FANS

# 5, 12, 24, 48V

Orion DC Fans are designed to meet UL, cUL, TUV, VDE and CE standards. All series numbers are UL / cUL approved (E170149) and most carry European approvals as well. Fans not currently listed with a European agency will be submitted at customer request at the discretion of Orion Fans management. Fans are warranted to be free of defects in material and workmanship for a period of one year from the date of delivery.

## GENERAL DC INFORMATION

### MOTORS

Brushless DC, locked rotor and polarity protected. Auto-restart.

### DIELECTRIC STRENGTH

1 second at 500VAC  
max. leakage 500 micro Amp

### IMPELLERS & FRAMES

Glass-reinforced thermoplastic (UL94V-0, PBT), die cast aluminum is available on several different models

### POWER CONNECTION

Terminals - push-in flat pins or  
Lead Wires - 2x 300mm (12")

### BEARINGS

Two high precision, double-sealed ball bearings (60,000 hours, L10)  
or a sintered brass sleeve (30,000 hours, L10)

### OPTIONS

Tachometer  
Alarm  
Thermal Control  
Manual Speed Control  
Variable Input, constant speed  
Custom Assemblies

## DC INDEX AND SIZE REFERENCE

SIZE (MM)	SIZE (INCHES)	SERIES NUMBER	PAGE NUMBER
80x15	3.15"x0.59"	5415003	35

## DC PART NUMBER CONSTRUCTION (EXAMPLE: DD127AP-12HTB)

Type:	Frame size: (mm)	Construction:	Voltage:	Speed:	Connection:	Bearing type:	Special Function Code
<b>OD</b>	<b>127</b>		<b>12</b>	<b>H</b>	<b>T</b>	<b>B</b>	
OD = DC fan	2510 = 25x10 3010 = 30x10 4010 = 40x10 4018 = 40x18 4020 = 40x20 4028 = 40x28 5010 = 50x10 5210 = 52x10 6010 = 60x10 6015 = 60x15 6020 = 60x20 6025 = 60x25 8015 = 80x15 8025 = 80x25 8032 = 80x32 9220 = 92x20 9225 = 92x25 1225 = 120x25 1232 = 120x32 1238 = 120x38 127 = 127x38 172 = 172 dia. 254 = 254 dia.	[blank] = standard UL94V-0 Thermoplastic PT = standard UL94V-0 thermoplastic AP = diecast aluminum, painted black SAP = 172x150x51 die cast aluminum frame, painted black SAPL = 172x150x38 die cast aluminum frame, painted black SAN = 172x150x51 die cast aluminum frame, unpainted	05 = 5VDC 12 = 12VDC 24 = 24VDC 48 = 48VDC	HH = Extra High speed H = High speed M = Medium speed L = Low speed LL = Extra low speed	T = terminal type fan [blank] = 2x 300mm lead wires	B = Ball bearing S = Sleeve bearing	none standard 01 Tachometer Output 5VTTL* 02 Alarm Output 5VTTL* 03 Thermistor Speed Control (hub) 04 Thermistor Speed Control (wire) 05 PWM Input 06 Dual Speed 07 Temperature Sensor 08 Tachometer + alarm* 09 Tachometer + Theristor* 10 Tachometer + PWM* 11 Tachometer + Temperature Sensor* 12 Alarm + Theristor* 13 Alarm + PWM* 14 Alarm + Temperature Sensor* 15 Tachometer + Alarm + PWM* 16 Tachometer + Alarm + Thermistor* 17 Extra long lead wires 18 Metal Impeller 19 High Temperature 20 Conformal Coating 21 Customized

\* Tachometer and alarm functions are available as "5VTTL" or as "open collector". If you need an "open collector" type please add the letter "a" after the Special Function Code. See end of the DC section for circuit diagrams.

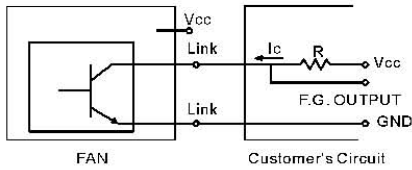
# SPECIAL FUNCTION INFO

## Function

### Frequency Generator

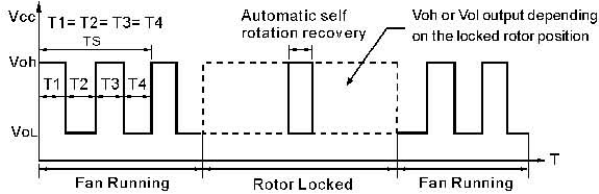
Generates a square wave out frequency equal to 2 periods per revolution for 4 poles fan and informs the user of the fan's running speed.

#### Application 1



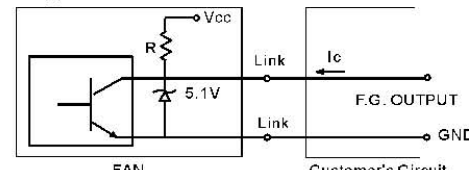
Vcc=From +5 To +28 VDC (Generally using +12 or +24VDC)  
Ic=5 mA max.  
R=V/I (Output "R" value calculation)

#### Output Waveform



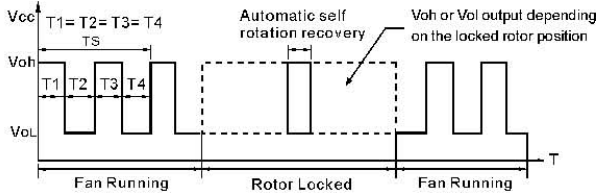
- ◆ N=R.P.M
- ◆ Ts=60/N( Sec )
- ◆ Output Level  
Voh=Vcc\_10%  
Vol=0~0.6V  
Ic=5 mA max.

#### Application 2



Vcc= From +5 To +28 VDC (Generally using +12 or +24VDC)  
Ic= 5 mA max.  
R (type) = 10K

#### Output Waveform

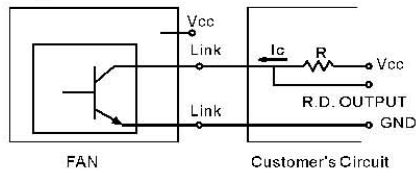


- ◆ N=R.P.M
- ◆ Ts=60/N( Sec )
- ◆ Output Level  
Voh=5.0V\_0.5V  
Vol=0~0.6V  
Ic=5 mA max.

### Rotation detector

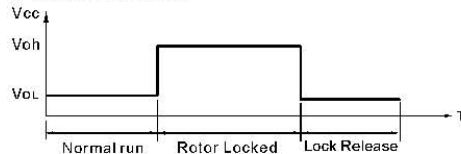
Detects whether the fan is running or has stopped by generating a high or low output signal.

#### Application 1



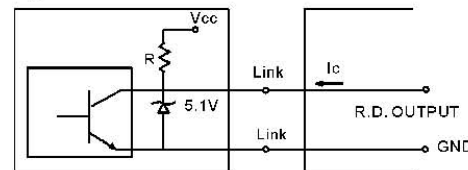
Vcc=From +5 To +28 VDC (Generally using +12 or +24VDC)  
Ic=2 mA max.  
R=V/I (Output "R" value calculation)

#### Output Waveform



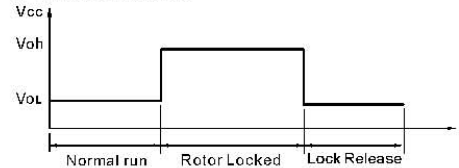
- ◆ Output Level  
Voh=Vcc\_10%  
Vol=0~0.6V  
Icc=5 mA max.

#### Application 2



Vcc= From +5 To +28 VDC (Generally using +12 or +24VDC)  
Ic= 5 mA max.  
R (type) = 10K

#### Output Waveform

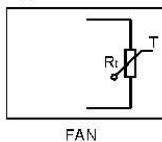


- ◆ Output Level  
Voh=5.0V\_0.5V  
Vol=0~0.6V  
Icc=5 mA max.

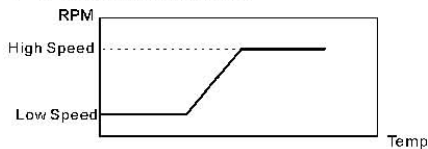
### Temperature Control

Controls the fan speed via an thermistor which changes with the temperature of the task area where the thermistor is located.

#### Application



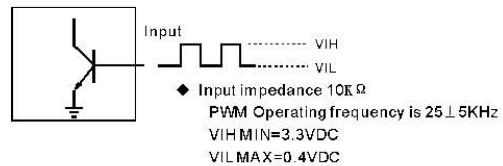
#### RPM Temperature curve



### Pulse width modulation

Controls the fan speed automatically via an external input Pulse Width Modulation signal.

#### Application



- ◆ Input impedance 10KΩ
- ◆ PWM Operating frequency is 25±5KHz
- ◆ VIHMIN=3.3VDC
- ◆ VILMAX=0.4VDC

#### RPM & Duty Cycle Curve

